

BROWER (J. V.)

A
POPULAR TREATISE;
CONTAINING,
OBSERVATIONS CONCERNING THE ORIGIN OF
YELLOW FEVER;
TOGETHER WITH
PRACTICAL RULES OF CONDUCT
FOR PREVENTING THAT DISEASE,
AND THE BEST METHODS OF NURSING
Fever Patients.

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PREFACE.

IT is a duty incumbent on physicians to examine medical opinions with the utmost rigor of investigation ; to expose such as have a pernicious tendency, and to make known all important facts, within the circle of their knowledge, which may be useful to mankind, by promoting the general good.

The following publication was commenced during the intensely cold weather of last winter. I knew no subject, at that time, more deserving of research, and to which my leisure hours would be more usefully employed. I was convinced that the attention of too many of the citizens of New-York, was withdrawn from the true sources of epidemic fevers, and placed on others which are merely the fanciful products of men of warm imaginations. The consequence has been, that too many persons have avoided the latter, posed themselves to the former. They neglect the things which they ought to

The treatise before us, is divided into three parts ; in the first part, the causes of disease are enumerated, as they exist in this city ; under which head, the reader will observe, that I have classed some agents among the causes of fever, which cannot be removed—they exist, and are as immovable as the climate. Such an opinion, concerning the origin of disease, may, at first sight, afford but a gloomy prospect. For, if we admit yellow fever to be a specifically contagious, and an imported disease only, its propagation may be arrested by a strict execution of health laws.

Again—If we allow that distemper to be generated by filth and putrid effluvia, by removing the latter, we might escape the ravages of the former. Both these opinions are somewhat flattering to the public mind ; and they may be suitable to gain advocates, and to create confidence in a class of citizens who are not very particular as to sentiments which they may adopt.

Both the above opinions are sinking fast into discredit. Why ? Because the utmost exertions to prevent the introduction of the disease from abroad, have not been

great success as they would have been, if the disease were propagated by specific infection only ; and the strictest attention to cleanliness, has proved unsuccessful. These facts must influence the mind very much, and create in it suspicion and uncertainty. There are other facts related in the course of this publication, which may tend to enlighten some, and to turn the attention of every candid individual, toward those objects which are truly interesting to all.

The second part consists of such practical rules of conduct as have been discovered to be useful in preventing the accession of disease ; to which are added some observations addressed to those persons who leave the city during the prevalence of epidemic fevers. With respect to prevention, with a few exceptions, every individual must act as his own life-guard, as his safety will depend, in a great measure, upon his own prudence and proper conduct.

The third part of this publication contains the most approved modes for nursing fever patients. It may be called the physicians hand-maid. The main object in view is, to lessen the fatality arising from epidemic sickness ; and to form more rational and

enlightened nurses, by making them acquainted with the principles of their art.

If they who lay on a bed of sickness, shall, in any way, derive benefit from this treatise, the author's object will be completely fulfilled, and the highest satisfaction given, which shall serve as ample encouragement to some future attempt.

The Author.

NEW-YORK, (67, James-Street)
July 9, 1803.

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A

POPULAR TREATISE, &c.

PART FIRST.

*A Physical Description of New-York, and
the Sources of Moisture enumerated.*

THE city of New-York is situated on the southwest point of Manhattan, commonly called New-York island. To the southward of the city expands York bay, which is formed by the confluence of the East and Hudson rivers. This bay is about nine miles in length and four in breadth, which communicates with the ocean through the Narrows, twelve miles from the city.

Long-Island separates New-York from the Atlantic Ocean. The south side of Long-

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Island exposes a flat surface of a light sandy soil, and adjacent to the sea-coast are large tracts of salt-meadow, extending from the west point of the island to Southampton. This meadow, the ocean, together with York bay, and the contiguous rivers, are the sources, from which the atmosphere at New-York may be impregnated with a considerable quantity of moist exhalations.

The land on which New-York stands is variegated with many eminences and corresponding depressions. The streets are very irregular as to their length, breadth, and the direction in which they run. It is not uncommon for one part of a street to be elevated and dry, while another part, not far distant, is low, damp, and unfriendly to health.

The streets and alleys adjacent to the east river, are for the most part low, and situated on nearly a level surface, which is principally new-made ground.

The buildings along the north river, which stand next to the water, are similarly situated to those of the eastward part of the city. The earth here also, is level, porous, and gained by encroachments on the river. The first

floors of the houses are not much elevated above high water mark. The cellars, for the most part, are damp throughout the year, and many of them become nearly filled with water at the time of spring tides. The buildings on the opposite side of the city, adjacent to the East river, are, for similar reasons, less eligible.

There are several streets, and portions of streets, at a considerable distance from the rivers, which are situated low and the ground damp and unwholesome. Moisture, which exhales from the earth and cellars of dwelling-houses, in such places, has pernicious influence upon the occupiers. I have often observed that persons who live in buildings of the above description, with damp, wet cellar-kitchens, seldom can enjoy uninterrupted health. Acute diseases, in summer and winter, have appeared to be more prevalent among them, than among those whose habitations stand on an elevated spot, and are dry.

There are other descriptions of houses in this city, equally unfavorable to health, by having their first stories depressed below the surface of the earth. Some buildings have

their back ground raised above the surface of the first floors ; in other instances, the earth in front is too high : either of these circumstances, or both combined, are pernicious to the health of tenants. The lowest apartments must occasionally be either damp, or very wet, and consequently dangerous. It has frequently been observed that few people can inhabit places of that description, without serious and lamentable consequences. Some persons are hardy enough to resist all ill effects for a while ; but, in general, the constitution, after a certain space of time, will begin to fail and may become forever ruined. A building may stand on an eminence, at a distance from any wharf, bason, or stagnant water, and nevertheless be unhealthy, by having the contiguous ground so high, as to contribute to the perpetual filtration of rain and moisture toward the tenement.

The custom of preparing cellar-kitchens for the purpose of hiring them to negroes, or the poor class of white people, is an imprudent one. It is, upon the whole, disadvantageous to both parties ; I mean the tenant and landlord. The tenant has his health

and constitution endangered ; he may be sick two, three or four months out of twelve, and consequently will not be in a condition to pay his rent. The landlord is then under the disagreeable necessity of being deprived of his lawful dues, or of acting a disgraceful and an inhuman part. These disagreeable consequences may partly be avoided by preparing, for the laboring poor, more healthy and comfortable lodgings. Let their habitations be dry and elevated, and they will be as conducive to health as human art can make them. Crowded or filthy places, provided they be dry and airy, have not so general and pernicious influence on the regular actions of life, as the presence of moisture, particularly if the atmosphere be subject to sudden vicissitudes of temperature. By this observation it is not my intention to encourage uncleanness, but it appears necessary to impress upon the public, a fact, which, if duly attended to in the selection of places of abode, in giving buildings a proper position, and by exciting a due degree of carefulness respecting long exposure to any moist exhalations, will have a happy influence on the

condition of a considerable portion of mankind.

If proprietors of lots shall, at a future period, build on those places now called the Collect and Lispenard's meadow, and are not very circumspect with regard to the depth they shall sink their cellars, those parts, in my opinion, will become not less remarkable for unhealthfulness, than the eastern part of the city.

New-York is nearly surrounded by water, and is only a few miles distant from the ocean. The air is extremely subject to be impregnated with moisture ; hence the dew, in particular seasons, is very dangerous, and its operation, frequently, is the only rational cause that we can assign for acute autumnal diseases.

I have seen very dangerous cases of yellow fever induced by exposure to cool, damp night air, in different parts of the city usually deemed healthy. The state prison and the battery have, respectively, been the places in which fevers have, in that way, originated. In such instances the patients had not been fortified by suitable dress, to withstand the

sudden change from a close and oppressive, to a moist and chilling atmosphere. It is necessary to remark that these cases of sickness could not be traced to any other origin ; that it would seem unreasonable, unphilosophical, and a ridiculous stretch of the imagination to disregard the above explanation, and to have recourse to either contagion, or putrid effluvia, as their exciting causes. Many persons, who leave the city in epidemic seasons, become sick in the country, and have their complaints ushered in, by similar steps of imprudence.

Cool night air, when attended with heavy dew, is pernicious at all times, but particularly so after a hot day, when the system has been previously relaxed by violent exercise, by excess in eating and drinking, or by the powerful stimuli of the sun's rays, in this populous city, where houses serve as so many barriers against a free circulation of the air. The city air, which, during the summer and autumnal months, is more close and confined, and less invigorating than the country atmosphere, relaxes

the body, and disposes it to fall into more perilous grades of disease.

In the country the muscles are more vigorous, the flow of spirits greater, and the perspiration not so copious ; hence the human system, under these circumstances may bear, without derangement, those changes from heat to cold, which would be dangerous when the actions of the living body have become modified by the presence of moisture, confinement, heat, and other accidental stimuli.

It is generally known to the inhabitants of New-York, that the heat, as indicated by a thermometer, during the space of a few hours in every season of the year, may vary many degrees. Such changes can never fail to be pernicious to the regular actions of human life. It is an incontrovertible fact, that mankind are capable of bearing, with impunity, considerable changes of temperature, when gradual in their progress ; but when transitions are both great and sudden, they are generally succeeded by derangements.

*The City Atmosphere, Winds, and the Effects
of pure and impure Air on the System.*

AIR, to be preserved in a pure and wholesome state, must occasionally be agitated. Wind, is merely a flow of the air from one part of the globe to another part. And such motion appears to be as necessary, for the preservation of its purity, as the perpetual running of water only, will keep that fluid suitable for the use of man. Both air and water are more apt to become unwholesome in summer, than in any other season, because heat is the primary agent which can decompose, or render them impure by a mixture of heterogeneous substances.

Ventilation, or a free circulation of air, we can positively depend upon as a circumstance essentially necessary for the human frame to support its regular and healthy actions. At all times and in all places where stagnation takes place, we shall find sickness supervene, whether in prisons, in hospitals, on board ships in port or at sea, or on land, in cities and villages. On board of vessels, in a warm climate, the human body is influenced, suc-

cessively, by heat, by a confined air, and by copious dew at night, when the mercury in the thermometer falls several degrees. This diminution of heat, with the other previous circumstances, will, in careless people, seldom fail to produce sickness.

The presence and action of the remote causes hitherto enumerated, will also account for the greater prevalence of fevers in one part of a city, than in another part.

The air is most confined and oppressive in those parts of New-York adjacent to the rivers, because they are lowest in situation. There are other particular places more central, which are equally depressed, and alike exceptionable in point of health. In consequence, however, of the compacted state of the buildings and narrowness of the streets, the air throughout may, when the winds are light, become stagnant, and by the operation of heat rendered impure and incapable of supporting the regular actions of life.

The opinions above advanced are confirmed by the following observations. 1. In epidemic seasons, streets which are elevated, airy and dry, are the most healthy, and re-

main, for the most part, free from the prevailing complaints.

2. During the hot seasons when winds blow frequently from the north and west, the city is free from pestilence. Winds from those quarters, bring healing on their wings. This was fully illustrated during the summer and autumn of the last year, when there was no alarm of an epidemic, and few cases of fever occurred of a dangerous nature. Intermit-tents, dyarrhæas and dysenteries, were the prevailing complaints.

Winds at New-York, during warm weather, which come from the east, north-east, or south-east, are generally accompanied with rain or moisture. Those which blow from the north, north-west, and west are pure, elastic and invigorating. Southerly winds are mostly light, debilitating, and in some parts of the city, are not perceptible to the senses ; then a state of stagnation in the atmosphere of New-York, usually takes place, and creates an unusual degree of languor and lassitude, which are the precursors of general and fatal diseases.

While the heat of summer prevails, fre-

quent breezes from the north enable the inhabitants to bear, without much inconvenience, the intensity of temperature ; winds from that quarter, attended with a dry, serene air, refresh the body and exhilarate the spirits ; fatal fevers do not then extend their ravages ; but when the wind comes lightly from the southward, or, as is often the case, when it fails totally ; the same degree of heat will become more oppressive, the air is in a state of stagnation, dangerous to the welfare of the system ; the spirits become depressed, and both mental and corporeal relaxation take place. Then the action of moisture is attended with danger ; then sudden transitions may prove fatal. It is very remarkable in such weather, that the human body is not capable of supporting those transitions, which, under different circumstances, are not hurtful, or, that the system is predisposed to fall into derangement, from causes which would have little or no effect under different circumstances.

New-York is so situated, the streets are so irregular, and they run in such various directions, that a very strong breeze of wind be-

comes requisite to be sensibly felt in all parts. We may be overheated and nearly suffocated for want of air while walking through a particular street, but upon suddenly turning to enter into another, we shall feel the wind too sensibly ; and the effect upon the system, especially if perspiration has commenced, is disagreeable and may be productive of sickness. Accidents of this nature, particularly at the approach of evening, are here well known to have ushered in diseases. How often have citizens, upon exposure to night air, when too thinly clad, immediately sickened ? It is, in my opinion, presumptuous, and the symptom of a predetermination of mind, to disregard such plain evidences, to withhold from them their due force and weight, and, by dismissing a plain connection of cause and effect, to throw darkness upon a subject of universal importance, by fanciful, visionary, and wire-drawn hypotheses.

Evidences that Pestilential Yellow Fever originates from the Operation of Heat, of Moisture, and of a confined Air, followed by sudden transitions of Temperature.

1. **P**ESTILENCE appears and rages with peculiar virulence in those parts of populous cities which are adjacent to rivers.

2. It is most apt to predominate in streets which have a low situation, and in all other parts which are favorable for an accumulation of rain and moisture, or where exhalations arise from the earth kept constantly moist, though not covered with water.

3. The epidemic fever declines on the appearance of frost.

By the freezing process, moisture is prevented from spending its action on the human system. In other words, as soon as the temperature of a city atmosphere descends below the exhaling point, the fever, in a short time, totally disappears.

4. Yellow fever has been observed either to commence its progress, or to become more general and more virulent after the fall of co-

pious rains, when those rains were succeeded by a close and sultry atmosphere.

5. Pestilence originates in those parts of a city where the buildings and inhabitants are most crowded, and the air close, confined and oppressive.

6. Seasons in which winds are high and frequent, whereby the city air is preserved in a perpetual state of agitation, and its invigorating influence becomes general, the epidemic fever does not rage.

7. Sudden and continued storms, or invigorating breezes have, frequently, suspended the progress of this disease.

8. Those streets which are situated on high ground and admit of a free circulation of air, escape the prevailing sickness. They do not appear to favor either the origin, or propagation of epidemics.

9. Yellow fever will originate and prevail among troops or passengers, when much crowded together, and too long detained in vessels, after entering into a warm climate.

In such instances the human body is affected, in regular succession, by heat, sudden transitions, moisture, and a confined air.

10. During the months of September and October, when sudden changes of temperature in the atmosphere at New-York, are most frequent, the mortality arising from epidemic fever, is at its greatest height. The two previous months, July and August, indicate a much greater degree of heat, and the putrefaction of animal and vegetable substances is then most abundant, but neither heat nor putrefaction, exclusively, can impair the health of the inhabitants.

11. The cases of fever that have occurred, which could not be traced to any other source, except to a sudden transition of temperature, or as it is commonly expressed, a sudden check given to the perspiration, are very respectable in point of number.

Several instances of patients, are fresh in my recollection, who were immediately seized upon exposure to a current of air, after being overheated, or under the influence of any of the predisposing causes. The reader, if he has been ever conversant with yellow fever, will, no doubt, recollect many cases which were owing to a similar origin.

The most healthy months of a year, to all

descriptions of people, are those in which the sky is clear and the air dry. The severity of cold, or the intensity of heat, barely by themselves, do not seem to injure the health of the inhabitants of New-York.

In countries, or in some particular places of a dry, sandy soil, where there is little stagnant water, or none; where the air is not subject to be impregnated with moisture, the human body can carry on its functions without interruption, in comparison to what occurs under opposite circumstances, from the action of very great degrees of heat.

*Summary Account of the Production of
Fever.*

FROM what has been delivered in the preceding pages, the reader will readily conclude what my opinions are concerning the origin of the yellow fever, and that they may be summed up and concentrated in the following manner, namely; that the continued operation of heat, and a confined air, or atmosphere, creates an uncommon share of debility and sensibility in the body (perhaps too a tendency to gangrene and mortification) in which state a small variation of temperature will act with great force and produce a great effect upon the system: that moisture is a pernicious agent, and promotes sudden subductions of heat from the human frame; or in other words, excites chilly sensations, particularly in the shade, or in the absence of the sun at night. That such sudden subductions of heat, in hot climates, or in hot seasons of temperate climates, in whatever way they be produced, may be attended with derangement of the circulation, and of the healthy actions of life, and pro-

duce the disease in question. That all the predisposing causes generate that dangerous and preternatural debility and sensibility which were just now mentioned; some of them produce a sedative effect immediately, such as fear; others produce, at first, excessive action, and afterward unusual debility, such as the heat of the sun, intemperance, or great fatigue of body.

Quotations from Authors of Distinction, which confirm the preceding Opinions concerning the Causes of Yellow Fever.

THE following quotations, selected from authors of great experience, fame and reputation, support and confirm the sentiments which have been delivered in the course of this treatise, concerning the origin and production of fever. It is proper to premise, that my opinions of the sources of pestilence were formed long before I examined the following passages, and that I have been convinced of their truth, principally, by my own experience.

Doctor Moseley, in his treatise on tropical diseases, third edition, page 64, makes the following remarks : “ From the great relaxation and debility of the nervous system, in tropical climates, the most trivial change of the air, which makes but a small variation on the thermometer, is productive of such a sensation of cold, or heat, as is no more to be accounted for by the operation of those powers on the thermometer, than the influence of the moon; and there is not vigor enough in the extreme fibres and vessels, to resist and overcome the smallest oppression of their functions. If the heat of the air should sink to seventy-two degrees, and remain stationary for a day, in places where the medium is eighty degrees, it produces an aguish or chilly sensation, that is hardly to be described. In the habitable mountains, where the air is never so cool as what is called temperate in Europe, people who go there suddenly from the low-lands, find the coldness, at first, hardly supportable ; and that intolerable coldness which is felt on the summit of the Blue-Mountains (the highest land in Jamaica, about 2400 yards above the level of the

sea) is but the effect of the suddenness of the change from the scorching heat below ; for the thermometer has never been known to be lower there than forty-two degrees, and that even at night, during a north wind, in the month of February."

" The least change in the wind also to the west or south, from the eastern points, whence, by its constantly blowing, the body becomes naturalized to it, though there shall be no difference found by the thermometer whatever, is instantly felt, with languid, heavy, and feverish impressions, similar to those produced by the Sirocco wind in Italy."

" In this state of body, heat, which has destroyed the tone of the nerves, and graduated the fluids to its own standard, is necessary for existence, but it must be uniform ; and one of the reasons that the rains are so fatal between the tropics is, that they increase both the heat of the day, and the coldness of the night, and make more variety in the atmosphere then, than there is at any other time."

" Heat and moisture, uninterrupted, are not the causes of so much mischief as is attri-

buted to them ; for they carry a powerful remedy with them, which is perspiration. The mischief they produce is, that they dispose the body to the slightest impressions from cold ; and, however paradoxical it may appear, cold is the cause of almost all the diseases in hot climates, to which climate alone is accessary."

The great, humane, and benevolent *Howard*, who visited the prisons and hospitals of all Europe and the East, speaking of the origin of putrid or jail-fever, says, " If it were asked me, what is the cause of this disease ? I should not answer, a want of cleanliness ; for I have found in some prisons, cells and dungeons, as offensive and dirty as any I have observed in this country, where, however, this distemper was unknown ; I am obliged to look out therefore for some other cause of its production. This, in my opinion, arises from want of proper ventilation, and the corruption of the fluids."

" It is now universally known, that the great source, or at least the remote or occasional cause of disease in a tropical climate, is the exhalation arising from the action of

heat on moisture, which derives various degrees of power from different local circumstances, and by being received into a habit, under the influence of predisposing causes, produces disease." Practical Observations on the diseases of the army in Jamaica, by William Lempriere. Volume 1, page 6.

“ Artificial constraint and confinement in narrow space, by inducing a new process of secretion in the living system, seem to be the leading instruments in generating the cause. The organization of the human body is proved to be such, that it does not preserve a healthy action unless under pure and free air ; nor does it possess vigor, unless under frequent change of place, and active exercises, calling forth the exertions of the moving powers. It indeed appears, that the accession of pure air, and the active employment of the limbs or powers of motion, are the principles given by the Author of nature to preserve the health of the animal system ; for whenever the human body becomes deprived of these essentials, its health languishes, and its vigor decays ; nay, the actions, which support life, are then not only languid,

but they become diseased, or fall into unnatural movements ; in consequence of which, the ordinary secretions are so changed, that, though the actual existence of fever be not apparent, something noxious seems to escape from the system, which, to a certain extent from its source, affects the health of others. In this manner it has been observed, that persons from jails, work-houses, and other places of artificial confinement, though not at the time, and what is still more remarkable, though not observed at any period to have labored under formal disease, carry in themselves, or in their clothes, causes which occasion fever, in its most formidable aspect, to those who approach near to them. This, silent as it were, and gradually changed secretion, is sometimes found among large bodies of men, whose atmosphere proves certainly noxious to the irritable habits of full health, but affects in a smaller, if in any degree, those situated similarly with themselves. It is further to be observed, that the cause thus generated, speedily produces a fever in the body of a healthy man ; and that the fever so produced is accompanied with such al-

terations in the secretions of the system, as to generate a cause, occasioning similar disease, through an endless variety of subjects." An outline of the history and cure of fever, by Robert Jackson, M. D. page 109.

" Having considered this disease with attention, I am now of opinion, that the remarkable dissolution of the blood, the violent hæmorrhages, the black vomit, and the other symptoms which characterize the yellow fever, are only accidental appearances in the common fever of the West-Indies. They are to be esteemed merely as adventitious, in the same manner as purple spots and bloody urine are in the small-pox, or as an hiccup in the dysentary ; like these, they only appear when the disease is accompanied with a high degree of malignity, and therefore always indicate great danger. They in general proceed from intense heat, and a peculiar unhealthfulness of the air, though a gross habit of body, excessive drinking of spirituous liquors, and by being over-heated in the sun, may perhaps sometimes dispose to them." An essay on diseases incidental to Europeans

in hot climates, by James Lind, M. D. fifth edition, page 118.

“ This fever has been supposed by some to have been first imported to the West-Indies by a ship from Siam : an opinion truly chimerical, as similar diseases have made their appearance, not only in the East and West-Indies, but in some of the southern parts of Europe, during a season when the air was intensely hot and unwholesome. This happened at Cadiz in Spain in the months of September and October, 1764, when excessive heat, and want of rain for some months, gave rise to violent, epidemic, bilious disorders, resembling those of the West-Indies, of which an hundred persons often died in a day. At this time the winds blew mostly from the south, and, after sun-set, there fell an unusual and very heavy dew.”—Page 122 of the same work.

Doctor Lind, in page 133, proceeds to enumerate the most certain signs, or evidences, of an unhealthy country. “ The first proof of an unhealthy country, is a sudden and great alteration in the air at sun-set, from in-

tolerable heat to a chilling cold. This is perceived as soon as the sun is set, and for the most part is accompanied with a very heavy dew. It shows an unhealthy, swampy soil, the nature of which is such, that no sooner the sun-beams are withdrawn, than the vapor emitted from it renders the air raw, damp, and chilling, in the most sultry climates ; so that even under the equator, in some unhealthy places, the night air is cold to an European constitution.

“ The second is, thick noisome fogs, arising chiefly after sun-set, from the vallies, and particularly from the mud, slime, or other impurities.

“ The third is, numerous swarms of flies, gnats, and other insects, which attend stagnated air, and unhealthy places covered with wood.

“ The fourth is, when all butchers meat soon corrupts, and in a few hours becomes full of vermin ; when metals are quickly corroded, on being exposed to the open air ; and when a corpse becomes intolerably offensive in less than six hours. These are proofs

of a close, hot, and unwholesome spot. In such places, during excessive heats and great calms, it is not altogether uncommon, especially for such Europeans as are of a gross habit of body, to be seized at once with the most alarming and fatal symptoms of what is called the yellow fever, without even any previous complaint of sickness, or other symptoms of the disease."

PART SECOND.

Practical Rules and Regulations for preventing an Attack of Yellow Fever.

FOR the prevention of epidemic sickness, the rules of conduct, which are discovered to be useful, should be universally disseminated. And as the propriety and correctness of such rules arise from a due knowledge of the remote and exciting causes, the necessity and usefulness of the preceding observations, on those points, are, at once, rendered very obvious.

My precautionary remarks for preventing disease may be classed under two grand divisions ; first, such as relate more immediately to the sources of fever, namely, to heat, a confined atmosphere, moisture, and sudden transitions of temperature. Secondly, such as have reference to irregularity of conduct, or to any other causes which produce preternatural debility, and of course render the system less capable of resisting, effectually, the action of those morbid agents.

In the following sketch, those regulations

and rules of conduct only, are recited and insisted on, which my own observations have confirmed to be of practical utility.

Article 1. Removal from that close and heated and stagnated air, in which fever has been generated, is necessary.

This may be the safest and most effectual mode of preventing an attack of epidemic fever. But to make removal perfectly safe, it becomes requisite that those causes of disease be avoided, which are present elsewhere as well as in the city, and the effects of which upon the system, are very perilous, immediately after its emersion from a city atmosphere. For then the human body, by the continued operations of heat and confinement, has become languid, and the vigor of health has decayed; then some parts may be habituated to excessive action, while others are in a state of preternatural debility. It is, moreover, a decided fact that the system can not preserve its healthy movements except in a pure and free air.

If yellow fever were propagated by contagion only, an individual, by keeping himself confined within doors, without any ex-

ternal communication, would escape disease ; but that has not been the case.

If it were excited by putrid effluvia barely, sickness might easily be prevented by placing the body beyond the sphere of their action ; but, this also, by candid observations, is discovered to be ineffectual.

We must consequently enquire for some cause whose presence and action, are both more general and more uniform. This cause is no less than a close, heated, stagnant and oppressive atmosphere, which acts upon all, without distinction, who reside within its circumference ; and to shun that action is an object of the greatest importance for the preservation of health.

Article 2. It is always advisable to avoid the action of moist exhalations. Moisture is an agent, whose operation either disposes to, or directly induces pernicious consequences. During the heat of summer and autumn, when the air is stagnant and oppressive, from the action of the sun-beams, places which abound with moisture are, *particularly*, subject to fevers. Pestilence originates, and its virulence is principally concentrated

in those streets of populous cities, which are crowded, most depressed, or contiguous to rivers.

Removal from places of this description, to those which are drier, more airy, and more elevated, is certainly a prudential step, which shall ever be succeeded with beneficial consequences.

Where moisture predominates, the body is most apt to be impressed by sudden vicissitudes of temperature. For during the heat of the day, a close, moist air, induces profuse perspiration, debility, and probably, a tendency to mortification ; at all events, such a state supervenes, which disposes the system to fall, readily, into derangement, from small variations of temperature, particularly at night. Beware then of residing in such places !

Article 3. Common sense and experience, convince mankind that, in a refined state of society, sudden changes of temperature, may be attended with the destruction of health. This connection of cause and effect, has been perpetually enforced, as such, by many sad trials of the unwary, and by the rashness of unbelievers.

It is not thought impossible, that a transition of temperature, or the application of cold in winter, may produce rheumatisms, coughs, pleurisies, and a number of other complaints, but that a similar change in warm seasons, can produce intermittent fevers, remittents, bilious and yellow fevers, is not so generally believed, nor so easily understood.

Without producing, at present, any cases or facts to support myself, I shall, in a few words, inform the reader, my opinion concerning the origin and connection of fevers.

I believe, that the application of moisture, and a quick change of temperature, at any time, when the heat of the atmosphere is not so excessive as to produce preternatural debility in some one, or in every part of the system, may be succeeded by an ague or intermittent fever.

That the same causes will excite bilious, or remittent fevers, when the atmospheric heat has become more powerful, and when its operation has previously produced excessive action, or debility, in some particular organs.

That for the production of yellow fever, a

longer operation of heat, or a more powerful effect of that agent on unassimilated constitutions, attended with closeness and confinement of the air, become requisite. The presence of moisture facilitates the generation of this fever, and renders its ravages more extensive and more virulent.

The properties and effects of a heated, moist, and stagnant air, are richly deserving of farther investigation. But until their effects and properties are better understood, preserving the body free from impressions, which may arise from sudden transitions, is the most useful plan that an individual can adopt and pursue, for the preservation of his health.

Desultory applications of cold, I mean that degree of temperature which excites chilly sensations during the summer season, diminish and interrupt the regular actions of the system : which interruption and diminution of action may be prevented by suitable clothing, and a due quantity of spirits or brandy, or any other similar stimuli. These stimuli act as preservatives against the accession of disease, on the same principle that bark and

wine, opium, spirits of hartshorn, or alcohol, will prevent the cold stage and cure an intermittent fever.

Article 4. Exposure to the sun-beams, when very powerful, is so well known to be productive of ill consequences, that to expatiate upon it, would be intruding upon the readers' patience.

It is one of the most copious sources from which heat is poured into, and accumulated in the system. This accumulation of heat in the body is attended with many disagreeable effects : an unusual flow of sweat, want of appetite, debility, destruction of equilibrium in the circulation, and predisposition to derangement from slight transitions of temperature.

After exposure to the sun, disease generally commences at the approach of night, unless the body is, before that time, exposed to a draft of air ; hence we see the utility of preserving the body of an uniform temperature, by every mean in our power.

The sun has greater force, and exposure is more dangerous, in a city atmosphere, than in the pure, open air of the country ; which is

owing, together with other circumstances, to a greater confinement of the air, and less vigor of the constitution, consequently exhaustion must sooner take place.

Article 5. Excesses in eating and drinking, produce an accumulation of heat, and a preternatural degree of action throughout the system. But this superfluity of heat and action, cannot continue long. They must vanish: and the opposite extreme, namely, a sense of chilliness and want of vigor, will supervene. This is a state of unusual debility, and precisely that condition of the body in which fevers commence their ravages.

By avoiding excesses of every description, we consequently, on the above principles, will take one step farther toward the escape of pestilential fevers.

Immoderation in eating and drinking, beside producing a state of debility favorable to the invasion of sickness, are deleterious in another point of view. After the use of animal food and spiritous liquors, the quantity of air decomposed by the lungs, in the same space of time, is much greater than after living on a vegetable diet. This has been pro-

ven to be a fact, in a very clear and decisive manner, by that famous diver, Mr. Spalding. He observed that when he had eaten animal food, or drank spirituous liquors, the air in his diving-bell was consumed much faster than when he lived upon vegetable food and drank water.

Now it follows of course, that a person will require less pure air, when under the use of a vegetable, than under an animal diet; and it appears plain why the former, in a measure, is preservative from disease, by enabling the system to support its functions in a state of vigor and regularity, when the air is deficient in purity, as is the case in all populous cities, during hot weather.

I shall conclude this article with one observation more. Inebriety is dangerous at all times, and particularly so if the operation of liquor be upon the decline at night, when exposure to the air and dew is unavoidable.

Article 6. All the stimulant emotions, or those affections of the mind which produce vigor and activity of body, are, to a certain extent, preventives against epidemic fever. The emotions to which I allude, impress the

system with peculiar actions, which cannot easily be supplanted by others of a different tendency, arising from the presence and operation of contagion, or other causes of derangement.

The above, in my opinion, is the manner in which strong passions, which absorb the whole attention of an individual, act as preservatives against sickness. On that principle we may explain why those thieves, of whom I have somewhere heard or read, escaped the plague, although they went about robbing the dead, and were exposed, we may presume, to the most virulent contagion of that disorder. They were under the influence of very strong impressions, arising from either well-fed hopes, or dreadful apprehensions, which impressions were too powerful to be displaced by other different actions originating from contagion, or from other sources.

On the contrary, it will appear plain to the reader, why the sedative states of mind, such as grief and fear, should dispose the system to fall into diseased actions. Fear and grief produce want of appetite, languor, debility, and a diminution of the vigor of life, during the

presence of which, the body is in the most imminent danger, when exposed to the influence of contagion, or to the operations of heat, of a confined air, and sudden changes of temperature, because there is no sufficient force left in the system to make successful resistance against the invading enemy.

Article 7. Desultory exertions of body or mind, induce an undue quantity of excitement. This preternatural degree of excitement, is soon after succeeded by a proportional diminution of action, attended with a sense of weariness and languor. In this state of debility, the system is incapable of supporting its healthy and regular operations, when affected by sudden privations of heat. Hence, in seasons when epidemic fevers prevail, those patients, who become sick by exposure to a draft of air, or to the dew at night, after fatigue of body, are remarkably numerous.

In the close, heated, stagnant atmosphere of New-York, exertions of the body, are very apt to induce a dangerous state of feebleness, especially in those persons not habituated to violent labor.

The best advice that I can offer, for the preservation of health, after an undue degree of exercise, consists in keeping the body from cooling too suddenly. Throwing off part of our dress, at such times, and exposure to the dew at night, or to a current of air, or to the open atmosphere when not sufficiently warm to make the subduction of heat gradual, cannot be censured in terms too severe.

When exposures, of the above description, are unavoidable, gradual and constant movements, for a time, by walking, or a proper quantity of spirituous liquor, will have a useful tendency to prevent the commencement of disease, by blunting nervous sensibility, and by preserving heat and action throughout the system.

Article 8. Dress is used to answer two distinct purposes ; it serves either as an ornament, or as a defence against the inclemencies of the weather. In a refined state of society, it is an object of very great consequence, that fashionable dresses should be made to suit both the purposes of use and of ornament.

In every season of the year, when the atmosphere undergoes quick alterations of temperature, warm clothing, carried to a reasonable extent, is conducive to the preservation of health. If heat be uniform, it is not so pernicious ; but when hot days are succeeded by cool nights, it is a sure symptom of an unhealthy season in any district or country. Then is the time to wear clothing of materials suitable to fortify the body against all sudden transitions.

Flannel has been repeatedly recommended, and it is deserving of every recommendation that has ever been given. By its absorbing quality, flannel prevents those chilly sensations and other consequences produced by the perspirable fluids, when applied to the skins of those people who wear linen only. For when any fluid is evaporated from the surface of the body, a chilly sensation is inevitably excited ; because evaporation always produces cold.

To gain every advantage from the use of flannel, as a preservative from disease, shirts or waistcoats should be frequently changed

and washed. This will prevent the constant application of a substance impregnated with sweat, to the surface of the body, so dangerous, by promoting sudden variations of temperature in the system.

The most proper time for wearing of flannel, is in those seasons, when the atmosphere varies frequently in temperature ; when the fall of dew is copious, and when the evenings are much cooler than the days. In summer, when the heat is more uniform, I would recommend the use of muslin next to the skin. At that season, flannel may be too heating, and by promoting perspiration too copiously, may counteract its original design by the production of a dangerous state of debility.

Article 9. It is worthy of remark, that all causes, which have a firm hold on the mind and body, by impressing vigorous actions, peculiar to themselves, on the system, are preservatives against sickness. Among causes of this description, which act as preventives, we may, with propriety rank, as the most powerful, active employments, whereby the passions of persons are continually

excited, and their muscles in a perpetual state of activity.

Activity, together with passions and strong emotions, operate favorably by preserving the body in a certain peculiar state, in which it can bear, with impunity, the operation of very powerful morbid causes. For instance, if a military officer can excite in his troops an expectation of soon coming to an action, which may be done sometimes for a great length of time, he will preserve them, as long as those expectations last, in health and vigor. Or, if an army be kept in constant movements, disease will, thereby, be evaded.

But when troops are withdrawn from the scene of action to a state of tranquility, it has been universally the case, that sickness will then begin to appear and rage among them. This has been observed, in a particular manner, by writers on diseases of the West-Indies, who affirm, that among troops, health is best maintained by perpetual movements; by service during sieges, by the exertions of an active campaign, or by certain impressions during captivity.

On this principle, it is improper for citi-

zens, in epidemic seasons, to confine themselves in their houses, in order to evade contagion and sickness; for, in proportion to the decrease of confidence, business and activity, the danger of invasion by sickness, will increase.

Finally, in confirmation of the preceding remarks, I have observed, that in pestilential seasons, those people, who, from curiosity, or bravado, run about from house to house, seldom or never sicken with yellow fever; which may be accounted for on the principle that their systems were under the controul of very strong impressions, which could not be overpowered by contagion, or the other existing causes of fever.

Article 10. When circumstances combine together, favorable for the production and accumulation of too great degrees of heat in the body, nature diminishes the superabundant quantity by the processes of sweating, evaporation, and of expiration from the lungs; while, at the same time, a due quantity of diluting drinks is necessary for the healthy continuation of the processes of perspiration and expiration.

When animal heat becomes too much augmented, either by the application of atmospheric heat, or by the use of spirituous liquors, or by exercise, or by eating animal food, a sense of thirst is excited and we crave for acids, cold drinks, and a light diet. These are more satisfactory, and answer the purposes of the animal œconomy better than either hot tea or coffee, which are too generally used in this climate, during the heat of summer.

Providence, ever attentive to the welfare of his creatures, has replenished most parts of the earth with acid or sour fruits, whereby a suitable provision is made, together with other purposes, for the moderation of excessive thirst and heat of the human body. We need no verbal command to direct our choice. Instinct, I mean an urgent call of the system for some particular liquid, can never mislead man. It suggests to him the most efficient article to preserve and regulate the healthy actions of the animal œconomy.

The native acids, most generally employed, are lime-juice, lemon-juice, vinegar, and such as are contained in the fruits of the summer season. The two first mentioned,

when diluted with water, with the addition of some sugar and spirituous liquor, are very palatable, and are of great service for allaying heat and thirst.

The cooling effect of acids may be sensibly observed after taking a large draught of cider. A chilly sensation will, almost immediately, be excited.

Another evidence of the powerful effect of acids, is, their capability of diminishing, or totally dissipating intoxication. In countries where opium is much used, and in such quantity as to induce intoxication or stupefaction, in order to rouse themselves and clear their intellects, some persons will drink freely of lime-juice, which they know from experience will have the desired effect.

Acids operate favorably on the stomach ; they increase the tone of that organ, excite appetite, and promote digestion. The vegetable acids, when used freely, open the bowels and prove laxative.

In addition to their refrigerant, tonic, and laxative effects, acids have decidedly anti-septic powers also. In proof of their anti-septic powers, acids are found to be useful ; first, in

curing nausea and sickness arising from putrid matters taken into the stomach ; secondly, they are the most certain and effectual remedies in the cure of scurvy, a disease in which there is a tendency to putrefaction.

From the facts stated above, that acids have a refrigerant effect, that they give tone to the stomach, and are resisters of putrefaction, they are serviceable as preventives from disease in hot and epidemic seasons ; when the heat of the body is too great, and when digestion is not sufficiently strong and expeditious, to assimilate animal food before it may become putrid and prove obnoxious.

Article 11. The last precaution I have to deliver for the preservation of health, is useful to all those persons who visit or attend upon the sick ; namely, physicians, friends and nurses.

No person should visit a patient sick with yellow fever, or pestilence, with an empty stomach.

Food fortifies the system. Food creates vigor of action and strength of circulation ; which compose a state of the system favorable to the continuation of health. Food di-

minishes the appetency of the absorbing vessels, to imbibe any contagious effluvia.

Hence, it must appear very plain and evident to the reader, how a plentiful diet, sufficient to satisfy the wants of the system, has a direct effect of diminishing the danger arising from exposure to the exciting causes of fever.

I shall conclude my observations on the method of preventing disease, with the following precepts, which are conceived highly worthy of repetition, for the information of those persons, who have both the ability and inclination to put them into practice.

Live in a house with spacious rooms, and in a dry situation ; under-ground apartments, or houses situated low, or near the wharves and basons, are unwholesome and dangerous during the prevalence of epidemics. Keep within doors at night, or, if it be necessary to go abroad, wear flannel next to the skin ; flannel will break the force of the dampness and coldness of the night air, preserve a uniform temperature on the surface of the body, keep a constant friction on the skin, the pores duly open, and thereby prevent a suppression of perspiration. Never undress and sit in

a current of air after the body has been much heated by walking, or by other exercise. In general, beware of cooling the body suddenly, especially in the evening. Beware of getting wet, or of wearing damp linen or clothes. Go to rest early, and take every possible precaution to keep the body in a uniform state of warmth, when sudden changes in the atmosphere occur at night. Intoxication is dangerous, particularly if the operation of liquor be upon the decline, when the body is exposed to the night air. Late suppers are unwholesome. Food should be light, and of easy digestion; the quantity neither more nor less than the appetite craves.

Directions for Persons who retire into the Country during the Prevalence of Epidemic Fevers.

IT is too common for persons who evacuate New-York, during the prevalence of epidemic fevers, to dismiss every care for their personal safety. Absence from the city is considered as synonymous with freedom from

all danger. Though this may be partially true, it is not entirely so. Much will depend upon the conduct of an individual.

We often find citizens who have retired into the country, sicken with a similar complaint to that which was the cause of their flight, after an absence, frequently of several weeks.

Such cases are supposed, most commonly, to originate from contagion. Contagion is imagined to have been taken into the system, where the fever prevails, and retained until its effects have become evident by disease.

This certainly is a very easy method to overcome every difficulty attending the investigation of truth. Whether a person sickens, after an absence of only a few hours, or whether it be four, five or six weeks, before any complaint appears, an easy solution is given, by ascribing it to contagion* taken at New-York.

Another opinion, broached by a few of the learned is, that the fever under consideration, originates from the action of putrid effluvia,

* It is admitted that effluvia, arising from the sick, have an agency in producing fever.

which may be breathed either in the city, or in any other place.

I consider both these opinions as very objectionable for the three following reasons, in addition to the others which have been mentioned in the preceding parts of this treatise.

First. Persons have had a like disease without visiting New-York, during the prevalence of the autumnal fever.

Secondly. As far as my intelligence extends, the most of those absentees who have fallen victims had not seen a patient, nor entered any house where sickness existed.

Thirdly. Fevers attended with such peculiar circumstances of patients, have occurred, that an attempt to account for them from the action of putrid vapors, would be really puerile, visionary, and ludicrous.

It is a fact, very well known to those persons who have paid due attention to the subject, always excepting those whose opinions have been previously fixed, that it is impossible to trace the origin of a patient's complaint either to contagion, or to the inhala-

tion of any species of putrid effluvia or miasmata.

Allowing that the sickness of those, who absent themselves from the city, cannot be traced to either of the causes mentioned ; let us enquire if their origin may not be explained in a different and more rational manner.

Persons who leave New-York, while pestilence prevails, generally do it in a very great hurry, and in a helter skelter manner ; the mind much depressed under the pressure of anxiety, fear or grief. Every affliction of the mind which can depress the spirits, interrupt digestion, and create languor or lassitude, has a pernicious tendency. A state of the system is thereby produced favorable to the accession of disease ; that state in which the enemy, with little strength, can gain ground, and with little exertion, may attain a final triumph.

On the contrary, instances are not wanting where persons have been exposed, with impunity, to the most virulent cases of fever, to black-vomit, to every kind of evacuation, and when both their minds and bodies could

enjoy but little rest, or none. The precise nature of that condition of the mind would be difficult to be described. It is a state of operation different from grief, fear and anxiety. There appears to be united with it such resolution, perseverance and ardor ; under the controul of which, to whatever a man may apply himself, he can accomplish, almost to a miracle.

It should be recollected, that they who are leaving the seat of disease, may have been operated on by certain pernicious agents, whose aim is destruction, and to which almost all inhabitants are exposed.

Article 1. One of those agents to which I allude, is a confined atmosphere.

The air of a city is more or less confined, according to its situation, extent, and manner of building. In a part which is situated low, the buildings crowded, and the streets narrow, the atmosphere will be most pent up and vitiated. The air contained in the houses must be more heated and stagnated, than the external atmosphere. This state of the air is pernicious to health at all times, and in all places.

If the unprejudiced reader has had any personal knowledge or experience of epidemics, I mean general diseases, either in towns, fleets, prisons, armies or garrisons, let him, for a few moments, reflect on the state of the atmosphere, respecting confinement, or a free circulation, and he will be convinced that confinement is essentially necessary for their production.

If the air contained in the streets of a city be vitiated by heat and want of circulation, how much more so must be those portions of air comprised within houses? Such local confinement is apt, also, to be produced on ship-board, particularly in a crowded vessel. There too, the human body is very much disposed to become deranged by dyarrhæa, dysentery, scurvy, putrid fever, according to circumstances; and when heat has become more powerful, by that grade of fever, commonly called yellow fever or pestilence.

Article 2. Another pernicious agent to which a person may have been exposed, before evacuating the seat of pestilence, is moisture.

Moisture is either general or local; gener-

al, when the atmosphere is impregnated with it, which occurs at New-York, when southerly and easterly winds prevail. The dew at night is moisture of great extent, and of general application,

By local moisture, must be understood, that whose origin and operation may be confined to any particular place. All houses which stand adjacent to the waters, particularly when the tide can percolate into their cellars ; all streets or buildings situated on low ground, where marshes once were ; all apartments sunk below the surface of the earth, afford a too plentiful supply of that deleterious agent.

Article 3. Heat is another powerful agent of baneful influence. I do not imagine that the heat of our summers can be hurtful to the constitution, provided it be uniform, and the air circulates freely. But after the human frame has, for a length of time, been exposed to the operation of free caloric, some peculiar state is produced in the fluids, or solids, perhaps in both, by which the body becomes incapable of bearing, with impunity, sudden changes to a colder temperature.

Heat, when united with moist and a confined air, may produce changes in the system still more critical. What those changes are “sub judice lis est.”

However, I can state as a fact, that after the body has been operated on by those agents, any sudden vicissitude shall derange the regular and healthy actions of the system. Whether the ill effect be owing to a check given to the perspiration, or to too sudden subduction of heat and action, or to the application of cold to the highly excited nervous system, it is not for me to determine.

If the reader pleases, let him preserve these remarks in his remembrance, while I draw up a few cursory observations, which may be of some use to those who intend to leave the city, during the times of pestilence.

Caution the first.—The traveller should supply himself with a sufficiency of warm clothing of every description. Muslin, or flannel shirts may be useful; at certain times, perhaps, absolutely necessary.

If the reader will recollect, that frequently, nay, generally, frost begins to appear before the prevailing epidemic fever vanishes;

that frost is produced in the country two or three weeks previously to its appearance at New-York, and sooner in proportion, according to the distance northward, the propriety of a supply of warm clothing, will, at once, appear evident. Due attention to proper apparel, will be shewn useful for other purposes, which presently shall be mentioned.

Caution the second.—It will also be proper, for individuals, or families, to furnish themselves with a few doses of mild physic. Manna, for the purposes we have in view, will probably be the most agreeable, and attended, in its administration, with the least danger.

A pot of tamarinds, or a bottle of lime-juice, will be a very useful, if not an agreeable burthen. With them we can prepare drinks, more pleasant and grateful to a feverish palate, than any substance hitherto discovered.

For further particulars, respecting physic and treatment, it may be necessary to consult a physician, previous to departure.

Caution the third.—Mirth and gaiety are

both useful and agreeable, when they are preserved within due limits. When carried to excess, they will certainly be succeeded by an opposite extreme, which, from a peculiar combination of circumstances, may prove pernicious to an individual.

The disorderly passions should be curbed, at all times, with persevering firmness and resolution.

It is by no means advisable to form large parties of pleasure, after leaving any place, where fevers rage. Some excess or other is too commonly the consequence, which, in the present state of the body, may prove the exciting cause of a disease, precisely of the same nature and fatal tendency, as yellow fever. Let the man who is in pursuit of pleasure, keep in remembrance, that he once has breathed that atmosphere in which diseases have originated, and have become epidemic ; that his system may require only some irregularity, or vicissitude of temperature, to produce the commencement of sickness. Let him also recollect, that irregularity, and vicissitude of temperature, may be necessary to excite unhealthy actions in the

body after exposure to effluvia arising from the sick.

On this subject, I have one observation more to make, which is, when languor and debility succeed, after too free use of strong liquors, beware of exposure to the night-air, or avoid a sudden subduction of heat from the surface of the body, in whatever way it may be produced ; I repeat it again, beware of intoxication.

Whenever epidemics begin to rage, it is advisable to leave the city at an early period. This is the safest method to escape the action of contagious effluvia.

Another reason, equally cogent, may be offered to enforce the propriety of an early departure. It has before been insisted on, that the city atmosphere, is close, confined, and overheated, too much so for the human body to support, without being endangered ; especially during some particular seasons ; for such condition of the air is, either diminished or increased in degree, according to the prevailing winds. Now, the earlier the system shall be taken, beyond its influence, less

will be the danger of derangement from any of the exciting causes of disease.

It also will follow, that the longer any person may have been absent from the sources of epidemic sickness, the less will be his danger; because a free, open, invigorating air of the country, shall produce such changes as will fortify the system against any possible derangement from yellow fever.

Hence also will appear the propriety of great personal care, immediately after leaving the city, of living regular, uprightly, and preserving the surface of the body free from sudden vicissitudes.

Caution the fourth.—For travelling by land I have no advice very particular to offer.

The diet should be of that quality, and in such quantity, as may be most agreeable to the stomach and palate. It is difficult to discover which, too low a diet or gluttony, is most favorable to the invasion of sickness.

Exposure to the rays of the sun, when that luminary is unclouded, is improper. When exposure has been necessary or unavoidable, beware of cooling the body of a sudden; beware of standing still in the shade, open to

any chilling breeze. The rustic may be able to support such changes, with impunity, but the feeble and debilitated constitution of a citizen, is in danger of being seriously impaired.

Again, beware of travelling by night. This is very perilous when the heat of the previous day has been intense, or when the air, after sun-set, is moist and cool, or the dew copious.

Then, if exposure be unavoidable, is the proper time to defend the surface of the body by warm clothing, in order to prevent sudden stoppage of perspiration, or determination of the fluids to the internal organs. Then one or two glasses of the diffusible stimuli, may be of essential service. If these can not be procured, I would recommend moderate exercise by walking, running, or jumping; exercise will keep up a determination to, and preserve action on the surface of the body, keep the fluids in a regular and healthy course of circulation, and, consequently, prevent morbid congestions or sickness.

Caution the fifth.—By retiring from the

city, in vessels, sickness is more apt to occur, than by travelling on land. This conclusion I draw from some acquaintance of the number of cases that have, heretofore occurred on both elements. And, from the causes which are in constant operation, it is reasonable to conclude, that on board of vessels, disease must, in general, more frequently occur.

There moisture is more abundant, and changes are greater in the temperature of the atmosphere, by day and by night. During the day, a person must either be stewed up in a crowded cabin, or exposed to the intense heat of the sun. After sun-set, the confined air of a cabin becomes still more insupportable, while there is extreme danger on deck, from the operation of a moist, chilling night-air. Under such circumstances, a person cannot pay too much attention to his own safety.

Caution the sixth.—When a person shall have arrived at the place of destination, the same care which has been previously used, should still be persisted in.

The country air, when dry and serene, may be breathed with advantage in the open

fields. Keeping much within doors, where the air more nearly approaches in its qualities to that of populous cities, will retard those changes in the system, the early production of which is an object of great consequence.

When the choice of a place of residence is practicable, a house should be preferred of a dry, elevated situation. By such choice, some of the exciting causes of fever, and of other complaints, will be avoided.

Low, damp, unairy places, and all situations adjacent to stagnant water, or marshes, are universally unhealthy. Living near a marsh is unwholesome, on account of the great degree of moisture, with which the circumambient air becomes impregnated. Some of the learned have imagined, that there is a peculiar something in the marsh effluvia, beside moisture, which acts as the exciting cause of intermittent fevers. But this appears to me as mere conjecture ; because moisture, from whatever source it may come, when applied to the system, particularly in some seasons of the year, will create intermittents.

I have collected together a number of ca-

ses, which prove, clearly, that a damp air, without the aid or connection of any other agent, or that wet substances, or that water, when applied to the surface of the body, under certain circumstances, will produce intermittent fevers. It is common for a fever and ague to be excited by exposure at night to a heavy dew, by the dampness of a house, by plunging, or wading in river water, by wet feet, by wet clothes, and by the sudden application of cold air to the body, independent of the action of any species of effluvia.

The term marsh miasmata, I consider as indefinite, and incorrect; indefinite, because it conveys no precise idea to the mind; and incorrect, because it implies a something connected with moisture, without which derangement could not be produced. In place of marsh miasmata, or effluvia, may be substituted the term moisture. Moisture is an agent of more general operation than marsh effluvia, properly so called; and the application of moisture will more clearly explain the origin of diseases, at all times, and in all places.

PART THIRD.

Treatment of Yellow Fever, as far as Respects Regimen, or the most approved Modes of nursing that Disease to prevent the Propagation of Contagion, and to lessen its Mortality.

ARTICLE FIRST.

YELLOW FEVER, in general, is ushered in with a cold fit. This stage is sometimes of very short duration ; at other times, it will continue for many hours.

A patient, while the ague continues, should be allowed the liberty of acting in that manner which may be most suitable to himself, and gratifying to his feelings. Instinct will not mislead him. By instinct, in the present instance, I mean that feeling by which a patient becomes desirous of being well covered, or warmed by a fire. I have, frequently, been witness to the beneficial effects of such management during the first stage of fever.

Hot teas, which have a nauseous taste,

should not be administered. They may have a tendency to produce a perpetual retching to vomit during the continuance of the disease, and may assist, perhaps, to destroy, irrecoverably, the healthy condition of the stomach.

A moderately stimulating sudorific, such as shall have a pleasant taste to the patient, appears to be the most agreeable, and by far the most efficacious. Such a sudorific, succeeded soon after by diluent drinks, which shall have the power of proving cathartic also, may prevent violent action from supervening, cut short the course of the disease, and obviate the malignant form of yellow fever.

ARTICLE SECOND.

The cold fit gradually subsides, and a fever as gradually succeeds. This transition from one to the other may, however, in many cases, be very sudden.

The hot stage of yellow fever, now under consideration, is subject to great variety. This variety may arise either from a greater or less virulence of the contagion, or from a

difference in the constitution of patients, or from a combination of external circumstances, with respect to treatment, ventilation, and other incidents.

Patients, in general, are restless, and labor under great anxiety from pain in many parts of the body. Some instances, however, have occurred, in which the sick have not complained of any pain. Such are stupid during the continuance of the fever ; they are spiritless, and keep constantly in a dose ; have no appetite, and their debility is extremely great. When their tongues have turned black, death most commonly has been their portion.

Cold extremities are common symptoms. The feet and legs may be cold, while the trunk and other parts will feel hot to the touch.

Many patients complain, in the hot stage of fever, of a disagreeable, chilly sensation ; under circumstances which, to a superficial observer, might be thought impossible. Can the reader imagine, that a person, sick with epidemic, or yellow fever, will require more clothes or covering to keep himself in the most

comfortable state possible, than one in health ? Can you believe, that, to be covered with blankets, will be agreeable to his feelings ?

The reader may perhaps ask, is it proper to cover a yellow fever patient in this manner, in the hot stage of the disease, in the summer too ? I answer yes ; many patients require such treatment ; though it is not to be admitted and pursued as a general rule. The skilful physician will know when to vary, in that respect, his management, agreeable to the constitution of his patient.

Some physicians will not condescend so far as to enquire of the sick, their peculiar feelings and cravings, and adapt their advice and prescriptions to the comfort or convenience of patients. They may wish to put on an air of authority. Does the patient crave for one particular kind of drink ? They forbid him to touch it. Does he wish to have warmer covering ? They will protest against that. Perhaps the administration of this thing or that ; perhaps this or that mode of treatment, will not accord, or be in unison with their own theory, and preconceived opinions. It is my opinion, that, that physician will

conduct himself with most propriety and judgment, who can divest himself, at times, of every theory, and who can discover, and will attend to the indications of nature, with respect to regimen, in epidemic diseases.

That a patient, in malignant fever, and that even in the hot stage, may require more covering than a person in health, I have seen illustrated and confirmed by many cases.

I have heard of many persons, in the hot stage of fever, who have felt cold or chilly, under common circumstances, and whose nurses, or friends, have covered them in a suitable manner; but the attending physician, upon his arrival, has directed all warm covering to be immediately removed; ordered them to have nothing except a sheet, and in that way, as is commonly expressed, to be kept cool.

A physician of that mode of thinking, will feel his patients' skin; what state is it in? The surface is hot; he concludes of course, that cool air, or cool water, applied to the skin, will deduct heat from the system, and be, on that account, serviceable. This is a rash, and in my opinion, most frequent-

ly, an injudicious conclusion. It has introduced the practice of applying cold air and the cold bath to the skins of the sick, whose circumstances have been such, whose systems, or nerves, have been in such situation, that nothing could be more hurtful to them than those applications.

I have been in a similar situation myself; my skin has been hot to the touch, but still a disagreeable, chilly sensation would occur, unless my body was protected by as much bed-clothes as is necessary to keep us warm on the coldest winters' night. To that particular state of the nerves, or system, which gives rise to those sensations, I beg leave to call the attention of physicians in their course of practice.

Nurses are not so apt to err in cases of the above description, as physicians. Physicians act injudiciously by applying cool air and the cold bath to the skin; nurses behave very ignorant by carrying the hot treatment too far, by confining the sick, laboring under epidemic fever, and preventing them from breathing a cool, uncontaminated air. The

application of air, as a remedy, comes next under consideration.

ARTICLE THIRD.

In yellow fever, whatever may be the state of the nerves, from the commencement of the hot stage to the termination of the disease ; whether the sick may require warmth applied to the surface, or a light and cool treatment in that respect, a free ventilation of air is absolutely necessary in all cases. By breathing in a confined apartment, a diseased person will, in a short time, impregnate the air in the room with effluvia from his lungs and body, so that every inspiration of air will be nearly the same as the last expiration ; in this situation there will be, generally, an impossibility of surviving the effects of contagion, which must become accumulated every moment, and whose virulence will soon be raised to a high and dangerous degree.— Under such management, the disease becomes capable of communication, and the lives of nurses, friends and physicians, are endangered.

How contrary will be the effect, if the patient be allowed to breathe pure, uncontaminated air. His every breath containing pernicious particles, will be dispersed by a free circulation, and shall never be inspired again. Dangerous particles shall thus be eliminated from the body, and many bad symptoms prevented ; the disease abated or conquered ; the effluvia, or volatile secretions from the sick, hindered from being accumulated and concentrated to that degree, which may be necessary for it to excite disease in other persons. Then the lives of physicians, nurses, and others, shall not be in jeopardy, by their visits and attendance.

In epidemic seasons, at New-York, I have been witness to the beneficial effects of free air, in some instances, among the poor class of people. I have seen persons with violent fevers walking the streets; have been consulted, and have prescribed for them there; ordered them to sit or walk in the shade; by such management, together with some medicine, I have soon after heard of their recovery. Whereas, if fevers of such violence, had occurred among the effeminate, delicate

and less hardy portion of our citizens, the richer class, they would have taken to their beds, and by confinement in a chamber, specially by a close confinement, the disease, in opposition to every medicine, and all care and tender attention, would have advanced step by step, to a higher grade, and probably extreme debility, yellow skin, black vomit, *subsultus tendinum*, and a tendency to general mortification, would soon have supervened.

A free and unconfined air, while it lessens, or totally destroys the danger from morbid secretions, will, at the same time, abate or prevent malignant symptoms. Let us, for a moment, recollect the great fatality of small-pox, under the old mode of treatment. Only a few years have elapsed since patients, with small-pox, were kept hot, confined, and treated with warm and stimulating liquids. What was the consequence? The fever run high, eruptions were very numerous, and death was, most generally, the unhappy consequence.

At present, by the most approved treatment, the cool treatment of small-pox, the eruptive-fever is less, the eruptions are, in comparison, few, and the disease, take it all in all, is less severe and less fatal.

The same difference can, in my opinion, be produced in the mortality of plague, or yellow fever, by a more energetic mode of treatment, with respect to change of linen and ventilation. There must be an entire revolution in the public mind. Much prejudice, and much ignorance, must be totally eradicated. Nothing is more common than to confine the sick in a tight room, especially while the attending physician is absent, who, when present, may order the doors and windows to be opened, but does not insist upon free ventilation in terms strong enough to impress or convince those who attend.

The first object, in yellow fever, after the termination of the cold fit, is to place the patient in a spacious apartment, when that is practicable ; and whatever be its size, the room should have a perpetual succession of air, the doors and windows opened, and eve-

ry method used to supply fresh air to the patient. Let the air of every inspiration be different. Let the air of every expiration be dispersed, never again to enter into the lungs. Thus contagion shall be pumped out of the system, and, by a free circulation, it shall be diluted, and rendered almost harmless. We need not be under any apprehension upon entering a room or ward so regulated. Upon such regulation, the cure will, in a great measure depend. The use of medicines will have a better chance for success, the patient will recover sooner, the constitution will not be impaired for many years, as is too commonly the case, and a vigorous state of health will be more speedily acquired.

Upon the principle of allowing pure air to the sick, removal from the city into its suburbs, has been recommended and enforced, occasionally, with some apparent advantage. But in this situation likewise, the patient most commonly has to undergo a regular blockade in his chamber. His friend take the surest steps to make him surrender ; for man may exist a few days without food or drink, but deprived of air, he can live only a few moments.

ARTICLE FOURTH.

Dilution should be very carefully attended to. An ardent desire for drink, which has a considerable share in the cure of malignant fever, very generally prevails.

Let the cravings of nature be the polar star of the nurses' management throughout the whole disease. A strong desire for acid fruits, cool water, or sub-acid drinks, commonly supervenes. This is a natural appetite bestowed on us to answer some valuable purpose. In the present instance, cold and acid drinks may abate and disperse internal inflammations; they may correct putrid colluvies in the first passages, and they may diminish or prevent a disposition to general putrescency.

After a patient has been a long time debarred the enjoyment of cold drinks, I have observed their use to be succeeded with almost immediate relief. Patients, in whom nearly all hopes of recovery were lost, by cold acid drinks, have been relieved, revived, and their lives probably prolonged. One instance is fresh in my memory of a child who, encircled by his perishing brothers, was relieved, and,

to appearance, saved by the free use of a tart liquid, the drink, toward which nature pointed with strong and pathetic expressions.

Sour or accessant liquids are refreshing to the sick ; they allay thirst and heat, and they have a power to correct and prevent putrefaction. It has been proven by repeated experiments, that acids have a strong tendency to keep putrefaction of dead animal substances from taking place, and that they are not only anti-sceptics, but correcters of putrefaction also, as they have a power of sweetening putrid matters.

May not acids have a similar operation on living bodies ? I have observed them to remove oppression at the breast by producing sweat, or by relaxing the bowels. Upon the whole, acids may be classed among those articles called anti-sceptics, and deserve a conspicuous place in the phalanx of remedies for the cure of malignant fevers.

ARTICE FIFTH.

Cleanliness of body must be preserved by a frequent change of linen and bed-clothes.

The sphere of action of the morbid cause of malignant fevers is not very extensive. Contagion is accumulated, and rendered virulent in a close confined air of an apartment. Hence the utility of a free circulation.

The effluvia proceeding from the sick become, also, accumulated and concentrated, on clothes and bedding, when proper attention is not paid to cleanliness. In that condensed state, contagion assumes a greater share of activity, than when recent and diffused, or as directly proceeding from a diseased body.

On these principles, a frequent change of linen and bed-clothes, is of essential service in the cure of yellow fever. My experience is a testimony in favor of its utility. The change should be, at least, once in twenty-four hours; and the linen and clothes last taken off should be immediately plunged in water and well washed.

Such management will obviate the use of the cold and of the warm bath, for wiping off infection from the skin, and is not attended with the inconveniencies and danger

which often accompany the latter. Cold water, is, in my opinion, a dangerous application. The warm bath, though perhaps harmless in itself, yet, by a peculiar combination of circumstances, may be the cause of much inconvenience, and do a great deal of mischief to the patient. But what can be the use of washing off, with water, infection from the skin, when immediately after the same clothing is applied, impregnated with similar infection, but more condensed? I wish not to enter deeply into any argument concerning the use of baths in epidemic fevers. Let the reader judge for himself.

It is the duty of a nurse, to remove from the chambers of the sick, all evacuations which may come from the stomach and bowels. This should be done without delay, and every part of their chambers, together with the bodies of the sick, should be kept perfectly clean and sweet.

Changing of beds, on which patients lay, and airing them frequently, will most probably be of essential service. Straw-beds are, likely, more suitable than feather-beds, to an-

swer the purposes of cure ; though I cannot vouch for their preference in point of usefulness, from want of experiments and observations.

In the year 1803, I attended a case of yellow fever in the month of December. The disease could not be traced to any other source except to contagious matters, which might have adhered to the walls or floor of the room. These matters, or morbid secretions were, probably, deposited there by a person who died a few weeks before with that sickness ; for the room had not been thoroughly cleansed.

After recovery, or death, the apartments in which the sick have lain, should be well scrubed, white-washed, and aired. These processes will dilute, and disperse all dangerous particles, and render entrance and occupation perfectly safe.

ARTICLE SIXTH.

In all confined places and rooms, and in every situation where the air does not circulate briskly, sprinkling the floor with vine-

gar, will be of service. That process is of use, particularly, in a close and sultry atmosphere. Vinegar consumed in that way has a cooling effect, by producing evaporation ; as it evaporates oxygen is let loose, which purifies the air contained in the room, making that air, part of which the patient may have breathed, more fit for the purposes of respiration.

ARTICLE SEVENTH.

Fixed air may either correct or prevent putrefaction from taking place. This is proved by experiments and observations on dead animal substances ; and from analogy, fixed air may be supposed to have a similar effect on living bodies. But I do not insist upon this species of air, or such liquids, which are impregnated with it, as particularly worthy of attention in the cure of fevers. I shall only observe, that beer, ale, porter, or cider, may be given with advantage, particularly, when the sick have a craving desire for them. This craving, in general, seems to be the truest index yet known, pointing to those particular

articles, which will not be disagreeable or burthensome to the stomach.

After perusing the preceding observations, on the management of patients in epidemic fevers, the reader will readily observe, that I have not expatiated upon the best modes of treatment respecting medicines and external applications. These, more particularly come within the jurisdiction, and require the skill and judgment of physicians, to make a proper selection, and to vary them according as circumstances shall require.

Those particulars, only, are insisted on, which if generally diffused, will have a good effect upon the public mind. If we had gone farther, and exhibited to public view, those points, which may be called secrets in the medical art, the effect produced would have quite an opposite tendency. The public good would not, thereby, have been promoted. It might, perhaps, have given some light to those persons who are not devoted to the practice of physic ; but that light would have no other result than distracting the understanding.

Why the most Approved Regimen, for the Cure of Pestilential Fevers, should be universally known.

I SHALL now offer the following reasons and arguments, to show the necessity that the public should be instructed in the cure of pestilential fevers, so far as the method of cure depends upon a particular regimen of the patient.

1. During the prevalence of epidemic diseases, physicians may be too much hurried, to make those remarks, and issue those orders, which may be particular and illustrative enough for the welfare and safety of their patients.

2. Pestilential, or contagious fevers, excite great apprehension in all people ; and physicians too, may be under the controul of fear and of terror. Under these impressions, let them possess ever so much judgment and skill, in a cool and deliberate state of mind, they will not be able to do justice to the sick, in every minute point. It is a common complaint, that physicians, even those who speak of yellow fever, as barely an infectious disease, a disease not specifically contagious,

make their visits of very short duration, and too short to afford entire satisfaction. They come—they see—they fly !

3. A physician, when called for, may be absent and visiting his patients, and it will appear reasonable, that the friends of the sick, should not, in the mean time, be totally ignorant of the best method of management. An ignorant nurse may do much mischief in half an hour. If the method of cure, as far as it depends upon regimen, and simple medicines, be generally known, all those evils which might otherwise occur, before the doctors' attendance, will be obviated and prevented.

4. At all events, it is the duty of attendants upon the diseased, to see that cleanliness, ventilation, and other particulars related in the method of cure, be thoroughly and faithfully executed. Hence the necessity of a perfect acquaintance with the proper mode of proceeding. Especially when we reflect, that the lives of the sick are dependant upon the execution of the foregoing regulations, inasmuch as their bodies shall, thereby have an opportunity of escaping the action of mor-

bid and dangerous secretions. In a close and confined room, the effluvia proceeding from a yellow fever patient, may recoil upon himself and be the perpetual source of mischief. The body will not be able to support itself under the constant operation of those secretions, or exhalations, which are every moment augmented in virulence.

5. Should the regulations here insisted upon become well acquainted with, and universally introduced into practice, contagion will either not be generated at all, or it will be so feeble, or propagated to so small a distance, that the lives of attendants and physicians, will not be in jeopardy.

Small-pox was once as fatal as yellow fever. By a revolution from a hot to the cool treatment of that disease, its mortality is diminished. It once was the scourge of this city and of this country, and could excite as much terror as the epidemic fever does at this present time. And shall not the latter disease, by the combined efforts of mankind, be deprived of its terrors? Shall we not strip off its frightful garb?

I shall conclude with one observation more made in the West-Indies by Doctor Lind. “ Here the fresh air on the deck of a ship, a purge of salt-water, and the free use of cold water, were found to triumph over the cordial juleps of physicians.” This will, probably, be the case at all times and in all places, when the sick, who employ physicians, are stewed up in close, confined places, and have not proper attention paid to cleanliness, change of clothes, and ventilation.

On Diet in Yellow Fever.

WHEN solid food and drink are nauseous to the taste, it is the truest mark we know, that they will not set agreeable on the stomach. Loathsomeness to the taste, is a certain symptom, that the articles which create that sensation, cannot be digested or assimilated. They, consequently, if taken internally, must become putrid in the first passages.

On that account nurses, who want to be continually stuffing the sick, contrary to their inclinations, act very ignorantly; and, if at li-

berty to take their own course, they will, in a short time, do a great deal of mischief. Their intentions are good, but wrong steps are taken to gain the objects in view.

Remarks on Nauseous Medicines.

THE administration of nauseous medicines, to yellow fever patients, is, most commonly, improper, and, frequently, attended with alarming consequences. The strictest attention must always be paid to the state of the stomach. That organ, if possible, should be kept quiet.

Emetic medicines are improper, because they assist to destroy the healthy condition of the stomach, they may irritate that organ in a dangerous degree ; create perpetual nausea and vomiting, so that nothing can be retained ; and finally, after every remedy and application have been used in vain, black-vomit may close the awful train of symptoms. This is not bare speculation. Facts of the kind have occurred frequently in this city.

The stomachs of some patients, by the presence of disease, become very irritable ; in

such cases nauseous cathartics should be given with much care and circumspection, perhaps not at all, for they may, in certain states of the stomach have the same effect as emetics.

When patients have had constant retching and vomiting, emetics and drastic purges have been given with intention to remove the cause of those symptoms. In this instance the offending cause is supposed to be an accumulation of some kind of humor, phlegm or bile. The consequence of such practice, which evinces the falsity of the supposition on which it is grounded, has been the production of incessant vomiting, spasm, and inflammation of the stomach; and patients have puked until death has closed the scene.

*A successful Mode of treatment after vomiting
has supervened.*

WHEN the stomach is irritable, and after spontaneous vomiting has come on, the following method of treatment has been successful; the patient has been forbid the use of all irritating medicines, and nothing admi-

nistered except cool, diluting drinks, such as tamarind-water, lemonade, cold water, and boiled butter-milk, after being left to settle and cool. And, occasionally, the use of cold chicken-broth and barley-water. These were used alternately ; for by constant use, either of them, became in time disgusting, except the water.

In one instance, a sick person persisted in the use of them for the space of four days, when the stomach was finally quieted, and the patient considered almost out of danger. Those drinks were not, in the commencement, retained. But that was no conclusive argument, in my opinion, that they would not be of benefit. Sometimes the whole would be ejected that moment it was taken, at other times it would be retained for some minutes, and then again part only would be rejected. Glysters were, occasionally, had recourse to, during this treatment, while the strictest attention was paid to cleanliness and a free ventilation. This is one example out of many, shewing the necessity of patience and perseverance.

The foregoing management, or a similar one, appeared to me *a priori* upon calm reflection, to be the most rational mode of practice, and sundry trials have confirmed my predictions, that it is the only one, yet discovered, that has a tendency to save the stomach from irreparable inflammation, and to prevent the whole train of horrid symptoms, which otherwise generally succeed.

A Caution to Residents.

IT is very injudicious for persons who reside in the city, during the prevalence of epidemic fevers, if at any time they should feel somewhat indisposed, either to neglect themselves entirely, or to prescribe any medicines that may seem useful for their present complaints. Many fatal consequences have resulted from postponement, or by taking improper medicines.

Fevers, of the most dangerous type, often commence their career, with only slight and disagreeable sensations, which may continue for many hours ; of this, the generality of people, are not sufficiently aware. In cases

of that description, an alarm should be sounded with the greatest expedition.

It is very remarkable that many persons of bright intellects, even physicians, who we must imagine, are well acquainted with the various modes of attack, cannot, upon such occasions, persuade themselves of the danger arising from delay. The morbid affection appears to have blunted the native keenness of their understandings ; whereby the mind is not in a proper state to contemplate on future events ; therefore, it is a duty which every person should impose upon himself, to pay all possible attention to their friends and acquaintances, and if necessity should demand, to rouse them from their state of insensibility, and to convince them, in a delicate manner, of the probability of some approaching danger.

THE END.

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